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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,650	12/29/1999	CARL R. STEVENSON	STEVENSON-8	1262

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HARNESS DICKEY & PIERCE, P.L.C
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EXAMINER

PEREZ GUTIERREZ, RAFAEL

ART UNIT PAPER NUMBER

2686

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/473,650

Applicant(s)

Stevenson

Examiner

Rafael Perez-Gutierrez

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2686

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 12, 2005 has been entered. **Claims 1-21** are still pending in the present application.

Claim Objections

2. **Claim 2** is objected to because of the following informality: On **line 3**, delete "[[15]]" before "plurality". The Examiner suggests striking through [[15]] rather than bracketing it. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

Art Unit: 2686

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Consider **claims 1 and 8**, the newly added limitations of “to at least substantially eliminate multipath nulls” and “associated with a best path to a quasi-stationary source of the received signal” raise a new matter issue because the specification and drawings of the present application fail to disclose, suggest, or otherwise support said limitations.

A careful review of the disclosure of the present application by the Examiner resulted in not finding support, either implicitly or explicitly, for the above-mentioned limitations. In fact, the words “null” or “nulls” were nowhere to be found in the specification. The same applies for the receiver ... determining the bearing of a received signal *associated with a best path to a quasi-stationary source of the received signal*. From the amendment of claim 8, it appears that the Applicant is interchanging the word “nulls” with the phrase “channel impairments” or the word “impairments”. However, these words do not have the same meaning nor they were used interchangeably in the specification. Therefore, claims 1-21 are rejected as introducing new matter. Applicant is welcomed to point out where in the specification the Examiner can find support for said limitations if Applicant believes otherwise.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

Art Unit: 2686

basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless -- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by **Bevan et al. (U.S. Patent # 6,489,923 B1)**.

Consider **claim 1**, Bevan et al. clearly show and disclose a cellular mobile (wireless) telecommunications system (abstract) comprising:

a plurality of antennas 20, 22, 30 (figure 3) for use by one receiver (abstract, column 6 lines 57-65, and column 7 lines 8-12 and 35-39);

a scanner (inherent) adapted to sample (scan) through the plurality of antennas 20, 22, 30 to at least substantially eliminate multipath nulls (i.e., it allows for reception of signals not cancelled due to multipath) and provide a signal received from each of the plurality of antennas 20, 22, 30 to the receiver (abstract and column 7 lines 8-12 and 35-39) and to impart Doppler modulation (e.g., Doppler induced bearing bias) onto a received signal, wherein one or more of the received signals from the antennas 20, 22, 30 are severely degraded (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) (abstract, figure 4, column 2 lines 6-20, column 6 lines 35-42, and column 7 lines 40-45); and

a receiver (figures 3 and 4) having direction finding means for determining the bearing of a received signal associated with a best path to a quasi-stationary source of the received signal (i.e., as determined by the beam producing maximum output) (column 4 lines 22-38) in

Art Unit: 2686

accordance with a phase thereof (abstract, column 2 lines 6-20, column 6 lines 28-62, and column 7 lines 7-39),

wherein said receiver is configured to eliminate multipath channel impairments caused at least by the severely degraded signals (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) (abstract, column 1 line 65 - column 2 line 20, column 6 lines 35-42, and column 7 lines 40-45).

Consider **claims 4 and 5**, and **as applied to claim 1 above**, Bevan et al. also show and disclose that the plurality of antennas are equidistant and can be spaced equally apart around a circular array (circumference of a circle formed about a center point) (column 4 lines 44-59).

Consider **claim 6**, and **as applied to claim 1 above**, Bevan et al. further show and disclose that the plurality of antennas comprises at least three antennae 20, 22, 30 (figures 3 and 4).

Consider **claim 7**, and **as applied to claim 1 above**, Bevan et al. also disclose that the scanner (inherent) continuously scans and connects each of the plurality of antennae 20, 22, 30 in turn to the receiver for a substantially equal period of time (dwell time T) (column 7 lines 8-12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2686

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. **Claims 2 and 3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Schuchman et al. (U.S. Patent # 6,148,195)**, both of record.

Consider **claims 2 and 3**, and as applied to **claim 1** above, Bevan et al. clearly disclose the claimed invention except that scan rate of the scanner is at least 100 hertz or at least 2000 hertz.

In the same field of endeavor, Schuchman et al. further show and disclose that a cellular telephone (wireless) communication system, comprising, among other components, an antenna resolver 40 (scanner) (figure 11) adapted to scan through a plurality of antennas SA1-SAN and provide a signal received from each of the plurality of antennas SA1-SAN to a receiver (column 6 lines 40-55) wherein the scan rate of the antenna resolver 40 (scanner) (figure 11) for scanning each of the plurality of antennas SA1-SAN is at least 100 hertz (at least 2000 hertz for the plurality of antennas SA1-SAN) (figure 10 and column 6 lines 22-39).

Art Unit: 2686

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the scan rate used by Schuchman et al. into the system of Bevan et al. for the purpose of optimal sampling of each of the antennas 20, 22, 30.

7. **Claims 8-17, 20, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Borras et al. (U.S. Patent # 5,303,240)**, and further in view of **Sole et al. (U.S. Patent # 6,150,987)**.

Consider **claims 8, 9, and 13**, and as applied to **claims 1 and 7** above, Bevan et al. clearly show and disclose method for communication in a cellular mobile (wireless) telecommunications system (wireless communication environment) (abstract) comprising:

providing a common transceiver with a plurality of antennas 20, 22, 30 (figure 3, column 6 lines 57-62, and column 7 lines 8-12);

continuously scanning through the said plurality of antennas 20, 22, 30 for a substantially fixed period of time (e.g., dwell time T) by connecting each of the plurality of antennas 20, 22, 30 to a receiver configured to at least substantially eliminate multipath nulls (i.e., to allow for reception of signals not cancelled due to multipath) caused at least by severely degraded received signal samples (e.g., due to high level of Doppler spread, frequency shift or offset, or multipath) and to impart Doppler modulation (e.g., Doppler induced bearing bias) onto a received signal (abstract, figure 4, column 2 lines 6-20, column 6 lines 35-42, column 7 lines 8-12 and 35-45);
and

determining the bearing of the received signal associated with a best path to a quasi-

Art Unit: 2686

stationary source of the received signal (i.e., as determined by the beam producing maximum output) (column 4 lines 22-38) in accordance with a phase thereof (abstract, column 2 lines 6-20, column 6 lines 28-62, and column 7 lines 7-39).

However, Bevan et al. do not specifically disclose that the plurality of antennas 20, 22, 30 are operated as a phased array during a transmit mode.

Borras et al. clearly show and disclose a communication system for determining the direction for transmitting and receiving a signal comprising an array of phased antennas 10 (figure 2) used for receiving as well as transmitting a signal (column 2 lines 51-66 and claims 1, 4, 5, 7-9, and 12-16).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bevan et al. with the teachings of Borras et al. in order to use the plurality of antennas as a phased array during a transmission mode. Efficient use of the system gain can be achieved by using the antennas as a phased array during a transmit mode.

However, Bevan et al. as modified by Borras et al. do not specifically disclose that the wireless communication environment is a substantially stationary or quasi-stationary wireless communication environment (claim 9) such as a wireless local loop (claim 13).

Sole et al. clearly show and disclose an antenna assembly and a method for communicating using said assembly in a substantially stationary or quasi-stationary wireless communication environment such as a wireless local loop, said method including, among other steps, the steps of scanning an antenna and finding the bearing of a received signal (abstract,

Art Unit: 2686

column 1 line 55 - column 2 line 47, column 3 lines 40-59, and column 4 lines 17-28 and 47-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to further modify the combined teachings of Bevan et al. and Borrás et al. with the teachings of Sole et al. to use said method of communication in a substantially stationary or quasi-stationary wireless communication environment such as, for example, a wireless local loop, as taught by Sole et al., for the purpose of enhancing the performance in said environment.

Consider **claims 10-12 and 14-17**, and as **applied to claim 9 above**, Bevan et al., as modified by Borrás et al., and as further modified by Sole et al. clearly disclose the claimed invention except that the quasi-stationary wireless communication environment is a wireless local area network, a cordless telephone or modem, a cellular or PCS telephone, a trunked mobile radio system, or a mobile satellite communications system.

Nonetheless, the Examiner takes Official Notice of the fact that all the above-mentioned environments are well known wireless communication environments and both Bevan et al. (abstract) and Borrás et al. (abstract and column 1 lines 6-9) disclose that their teachings apply to wireless communications systems.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teachings of Bevan et al., as modified by Borrás et al., and as further modified by Sole et al., in any of the above-mentioned well known environments in the art for the purpose of enhancing the performance in any of said environments.

Consider **claims 20 and 21**, Bevan et al., as modified by Borrás et al., and as further

Art Unit: 2686

modified by Sole et al., clearly show and disclose the claimed invention **as applied to claim 8 above**, and in addition, Bevan et al. also show and disclose that the plurality of antennas are equidistant and can be spaced equally apart around a circular array (circumference of a circle formed about a center point) (column 4 lines 44-59).

8. **Claims 18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bevan et al. (U.S. Patent # 6,489,923 B1)** in view of **Borras et al. (U.S. Patent # 5,303,240)**, and further in view of **Sole et al. (U.S. Patent # 6,150,987)**, **as applied to claim 8 above**, as further in view of **Schuchman et al. (U.S. Patent # 6,148,195)**.

Consider **claims 18 and 19**, and **as applied to claim 8 above**, Bevan et al., as modified by Borras et al., and as further modified by Sole et al., clearly disclose the claimed invention except that scan rate of the scanner is at least 100 hertz or at least 2000 hertz.

In the same field of endeavor, Schuchman et al. further show and disclose that a cellular telephone (wireless) communication system, comprising, among other components, an antenna resolver 40 (scanner) (figure 11) adapted to scan through a plurality of antennas SA1-SAN and provide a signal received from each of the plurality of antennas SA1-SAN to a receiver (column 6 lines 40-55) wherein the scan rate of the antenna resolver 40 (scanner) (figure 11) for scanning each of the plurality of antennas SA1-SAN is at least 100 hertz (at least 2000 hertz for the plurality of antennas SA1-SAN) (figure 10 and column 6 lines 22-39).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the scan rate used by Schuchman et al. into the method of

Art Unit: 2686

Bevan et al., as modified by Borrás et al., and as further modified by Sole et al., for the purpose of optimal sampling of each of the antennas 20, 22, 30.

Response to Arguments

9. Applicant's arguments filed on May 12, 2005 with respect to **claims 1 and 8** have been considered but are moot in view of the new ground(s) of rejection necessitated by the new limitations added to claims 1 and 8. See the above rejection of claims 1 and 8 for the relevant citations found in Bevan et al. disclosing the newly added limitations.

Conclusion

10. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

11. Any inquiry concerning this communication or earlier communications from the

Art Unit: 2686

Examiner should be directed to Rafael Perez-Gutierrez whose telephone number is (571) 272-7915. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.



Rafael Perez-Gutierrez
R.P.G./rpg **RAFAEL PEREZ-GUTIERREZ**
PRIMARY EXAMINER

September 21, 2005